UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,475	07/18/2003	Joseph W. Niesen	7784-000508	4570

			EXAMINER
27572	7590	10/18/2005	BAKER, STEPHEN M

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ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/623,475	NIESEN, JOSEPH W.
	Examiner	Art Unit	
	Stephen M. Baker	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 December 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>18 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Specification

1.   The disclosure is objected to because of the following informalities:

On page 6, in line 2, "packets 18 encode" apparently should be "packets 18 carry" or the like.

On page 6, in line 5, "sequence 20 produces" apparently should be "sequence 20 provides" or the like.

On page 6, in line 13, "Flags 22 encode" apparently should be "Flags 22 carry" or the like.

On page 7, in lines 12-13, "an correction code 28, such as a forward correction code, common" apparently should be "an error correction coding 28, for example using a forward error correction code. Common" or the like.

On page 7, in lines 16, 18, 21 and 23, "code 28" apparently should "coding 28" or the like.

On page 8, in line 1, "error correction codes 28 have stronger" apparently should be "forward error correction codes have stronger" or the like.

On page 8, in lines 4-5, "take the form code type" apparently should be "are characterized by the parameters" or the like.

On page 8, in lines 14 and 16, "code 28" apparently should "coding 28" or the like.

On page 10, in line 3, "CRC is performed" apparently should be "CRC coding is performed" or the like.

On page 10, in lines 7-10, "error correction code 34. The error correction code 34 may be any suitable error correction code, such as a forward error correction code. The forward error correction codes that may be used are similar to those that may be used with correction code 28. The error correction code 34" apparently should be "error correction coding 34. The error correction coding 34 uses the same error correction code as is used for the error correction coding 28. The error correction coding 34" or the like.

On page 10, in lines 12 and 14, "code 34" apparently should be "coding 34" or the like.

On page 10, in line 24, "should correct" apparently should be "should be able to correct" or the like.

On page 11, in lines 3 and 5, "bit changes" apparently should be "bit errors" or the like.

On page 11, in line 4, "correct at least one error" apparently should be "correct errors" or the like.

On page 11, in lines 23 and 24, "CRC equivalent 24" apparently should be "CRC equivalent produced by the coding 24" or the like.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

In claim 1: in line 3, "performing a cyclic redundancy check" apparently should

be "performing a cyclic redundancy check coding" or the like.

In claim 2: in line 6, "said cyclic redundancy check" apparently should be "a

cyclic redundancy check coding" or the like.

In claim 4: "performed by an error correction code" apparently should be

"performed using an error correction code" or the like; as applicant apparently refers to

an error detection code suitable for ARQ error detection as an "error correction code"

(page 10, lines 7-10, in an apparent indirect reference to error correction codes that are

not forward error correction codes) no definite added limitation is apparent.

In claim 7: "said data packets" apparently should be "at least one of said data

packets" or the like.

In claim 8: in line 2, "perform a cyclic redundancy check" apparently should be

"perform a cyclic redundancy check coding" or the like.

In claim 10: in line 4, "perform cyclic redundancy check" apparently should be

"perform cyclic redundancy check coding" or the like.

In claim 13: "device comprises a forward error correction code" apparently

should be "device comprises a forward error correction code encoder" or the like.

In claim 14: "device comprises a block code" apparently should be "device

comprises a block code encoder" or the like.

In claim 17: in line 3, "performing a cyclic redundancy check" apparently should be "performing a cyclic redundancy check coding" or the like; in line 14, "performing said cyclic redundancy check" apparently should be "performing a cyclic redundancy check coding" or the like.

In claim 18: "forward error correction code" apparently should be "forward error correction code encoder" or the like.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1, 2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,691,997 to Lackey, Jr. (hereafter "Lackey").

        Lackey discloses calculating a CRC for each ATM cell of a message and combining the cell CRCs to form a message CRC to be used for comparison with a received message CRC in order to detect message errors. Each of Lackey's cells is a "packet." Lackey's message CRC provides a "reduced bit count check sequence

equivalent" with "fewer than the number of bits occupied by said check sequences." As only Lackey's message CRC is transmitted, an effect of "freeing additional data bits for use by digital information data bits" is inherent in Lackey's arrangement.

Regarding claims 4, 13 and 18, Lackey's message CRC provides a block "error correction code" inherently capable of being used as a "forward error correction code."

Regarding claims 5, 15 and 19, the intended meets and bounds of a "superframe" not being evident, Lackey's message provides a "superframe."

6.   Claims 1, 2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,778,013 to Jedwab (hereafter "Jedwab").

Jedwab discloses calculating a CRC for each ATM cell of a message and combining the cell CRCs to form a message CRC to be used for comparison with a received message CRC in order to detect message errors. Each of Jedwab's cells is a "packet." Jedwab's message CRC provides a "reduced bit count check sequence equivalent" with "fewer than the number of bits occupied by said check sequences." As only Jedwab's message CRC is transmitted, an effect of "freeing additional data bits for use by digital information data bits" is inherent in Jedwab's arrangement.

Regarding claims 4, 13 and 18, Jedwab's message CRC provides a block "error correction code" inherently capable of being used as a "forward error correction code."

Regarding claims 5, 15 and 19, the intended meets and bounds of a "superframe" not being evident, Jedwab's message provides a "superframe."

7.   Claims 1, 2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,951,707 to Christensen et al. (hereafter "Christensen").

Christensen discloses calculating a CRC for each ATM cell of a message and combining the cell CRCs to form a message CRC to be used for comparison with a received message CRC in order to detect message errors. Each of Christensen's cells is a "packet." Christensen's message CRC provides a "reduced bit count check sequence equivalent" with "fewer than the number of bits occupied by said check sequences." As only Christensen's message CRC is transmitted, an effect of "freeing additional data bits for use by digital information data bits" is inherent in Christensen's arrangement.

Regarding claims 4, 13 and 18, Christensen's message CRC provides a block "error correction code" inherently capable of being used as a "forward error correction code."

Regarding claims 5, 15 and 19, the intended meets and bounds of a "superframe" not being evident, Christensen's message provides a "superframe."

8.   Claims 1, 2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,671,832 to Apisdorf (hereafter "Apisdorf").

Apisdorf discloses calculating a CRC for each ATM cell of a message and combining the cell CRCs to form a message CRC to be used for comparison with a received message CRC in order to detect message errors. Each of Apisdorf's cells is a "packet." Apisdorf's message CRC provides a "reduced bit count check sequence equivalent" with "fewer than the number of bits occupied by said check sequences." As only Apisdorf's message CRC is transmitted, an effect of "freeing additional data bits for use by digital information data bits" is inherent in Apisdorf's arrangement.

Regarding claims 4, 13 and 18, Apisdorf's message CRC provides a block "error

correction code" inherently capable of being used as a "forward error correction code."

Regarding claims 5, 15 and 19, the intended meets and bounds of a

"superframe" not being evident, Apisdorf's message provides a "superframe."

9.   Claims 1, 2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(e) as being

anticipated by U.S. Patent No. 6,912,683 to Rifaat et al. (hereafter "Rifaat").

Rifaat discloses calculating a CRC for each packet of a message (col. 5, line

39+) in encoding and decoding, and combining the packet CRCs to form a message

CRC to be used for comparison with a received message CRC in order to detect

message errors. Rifaat's message CRC provides a "reduced bit count check sequence

equivalent" with "fewer than the number of bits occupied by said check sequences." As

only Rifaat's message CRC is transmitted, an effect of "freeing additional data bits for

use by digital information data bits" is inherent in Rifaat's arrangement.

Regarding claims 4, 13 and 18, Rifaat's message CRC provides a block "error

correction code" inherently capable of being used as a "forward error correction code."

Regarding claims 5, 15 and 19, the intended meets and bounds of a

"superframe" not being evident, Rifaat's message provides a "superframe."

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 3, 16, 20 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lackey.

Lackey does not specify retransmitting the packets associated with a CRC error.

Official Notice is given that retransmission of messages received with errors, including

AAL5 messages for example, was conventional, and the benefits of such retransmission

were well known, at the time the invention was made. It would have been obvious to a

person having ordinary skill in the art at the time the invention was made to apply

Lackey's CRC coding arrangements to a communication system that uses

retransmission for correcting message errors. Such an application would have been

obvious because retransmission of messages received with errors, and the benefits of

such retransmission, were already well known.

12.   Claims 3, 16, 20 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Jedwab.

Jedwab does not specify retransmitting the packets associated with a CRC error.

Official Notice is given that retransmission of messages received with errors, including

AAL5 messages for example, was conventional, and the benefits of such retransmission

were well known, at the time the invention was made. It would have been obvious to a

person having ordinary skill in the art at the time the invention was made to apply

Jedwab's CRC coding arrangements to a communication system that uses

retransmission for correcting message errors. Such an application would have been

obvious because retransmission of messages received with errors, and the benefits of

such retransmission, were already well known.

13.   Claims 3, 16, 20 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Christensen.

Christensen does not specify retransmitting the packets associated with a CRC

error. Official Notice is given that retransmission of messages received with errors,

including AAL5 messages for example, was conventional, and the benefits of such

retransmission were well known, at the time the invention was made. It would have

been obvious to a person having ordinary skill in the art at the time the invention was

made to apply Christensen's CRC coding arrangements to a communication system

that uses retransmission for correcting message errors. Such an application would

have been obvious because retransmission of messages received with errors, and the

benefits of such retransmission, were already well known.

14.   Claims 3, 16, 20 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Apisdorf.

Apisdorf does not specify retransmitting the packets associated with a CRC error.

Official Notice is given that retransmission of messages received with errors, including

AAL5 messages for example, was conventional, and the benefits of such retransmission

were well known, at the time the invention was made. It would have been obvious to a

person having ordinary skill in the art at the time the invention was made to apply

Apisdorf's CRC coding arrangements to a communication system that uses

retransmission for correcting message errors. Such an application would have been

obvious because retransmission of messages received with errors, and the benefits of such retransmission, were already well known.

15.   Claims 3, 5, 15, 16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rifaat.

Regarding claims 3, 16, 20 and 21, Rifaat does not specify retransmitting the packets associated with a CRC error. Official Notice is given that retransmission of messages received with errors, including AAL5 messages for example, was conventional, and the benefits of such retransmission were well known, at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Rifaat's CRC coding arrangements to a communication system that uses retransmission for correcting message errors. Such an application would have been obvious because retransmission of messages received with errors and the benefits of such retransmission were already well known.

Regarding claims 5, 15 and 19, Rifaat teaches application of the CRC coding arrangements to any kind of data link. Official Notice is taken that transmitting packets in a superframe was conventional at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Rifaat's CRC coding arrangements to packets in a superframe on a data link having a superframe format. Such an application would have been obvious because Rifaat teaches application of the CRC coding arrangements to any kind of data link, and transmitting packets in a superframe was already conventional.

Conclusion

16.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

17.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Stephen M. Baker whose telephone number is (571)

272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30

PM).

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Stephen M. Baker
Primary Examiner
Art Unit 2133

smb